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Adnan Al-Adnani

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EXAMINER

SMITH, JOSHUA Y

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2419

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/531,134	Applicant(s) AL-ADNANI, ADNAN	
	Examiner JOSHUA SMITH	Art Unit 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berenbaum et al. (Patent No.: US 6,272,144 B1) in view of Griffin et al. (Patent Number: 5,406,403) and Markwalter et al. (Patent No.: US 6,577,630 B1), hereafter referred to as Berenbaum, Griffin, and Markwalter, respectively.

In regards to Claim 1, Berenbaum teaches in column 3, lines 8-12, and in column 4, lines 6-12, and in FIG. 3, Sheet 1 of 3, a line card (item 50, FIG. 3) includes a

a transmission convergence (TC) device (item 543, FIG. 3) with an in-band control configuration (Reconfigurable signal processing architecture comprising a reconfigurable data processing module).

Berenbaum also teaches in column 4, lines 12-16, and in column 5, lines 23-27 and 37-44, and in FIG. 4, Sheet 2 of 3, a transmission convergence device interfaces with a Utopia port, which is part of an ATM cell-based switch fabric interconnect with a SONET port, and a message format of a single 53-byte ATM cell (item 70, FIG. 4) for use in transferring control information between a control processor and a transmission convergence device, and a given ATM cell received in a transmission convergence device from a control processor is identified as a control message by the presence of a specific virtual path indicator (VPI)/virtual channel indicator (VCI) address in the ATM header (item 72, FIG. 4) (data is input to a module in a packet frame structure including configuration frames and processing frames, each frame including a header section, a header section having a mode selection bit indicating whether the frame contains reconfiguration data or processing data, and a module is operable in a reconfiguration mode or a processing mode responsive to a frame header and a mode selection signal).

Berenbaum fails to explicitly teach a module is operable in a reconfiguration mode or a processing mode responsive to a mode selection signal, a header section and a data section, a plurality of reconfigurable data processing modules, a single decoder serving a plurality of modules, a single decoder decoding bits of packets and providing signals to a plurality of modules, in which a portion of a packet is used to change data processing performed by a module, data portion of a packet is processed

by a data processing module responsive to a respective selection signal. Griffin teaches a module is operable in a reconfiguration mode or a processing mode responsive to a mode selection signal, and Markwalter teaches a header section and a data section, a plurality of reconfigurable data processing modules, a single decoder serving a plurality of modules, a single decoder decoding bits of packets and providing signals to a plurality of modules, in which a portion of a packet is used to change data processing performed by a module, data portion of a packet is processed by a data processing module responsive to a respective selection signal.

In the same field of endeavor, Griffin teaches in column 3, lines 30-43, and in FIG. 3, a DATA I.D. BIT (FIG. 3) in front of and separated from DATA BITS (FIG. 3), and where a value of 1 for the data identification bit may be preselected to indicate a packet contains configuration information, and, is a valid configuration is determined to exist, the transmitter shifts into normal transmit mode (a module is operable in a reconfiguration mode or a processing mode responsive to a mode selection signal). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Griffin with the invention of Berenbaum since Griffin explicitly teaches a transmitter module shifting from a configuration mode to a normal transmit mode, and can be implemented in the apparatus of Berenbaum since it ensures a convergence device of Berenbaum is configured properly prior to further data processing, ensuring that subsequent data is not processed with an incorrect, obsolete, or expired configuration that may result in lost, misused, or misdirected data.

In the same field of endeavor, Markwalter teaches in column 8, line 65 to column 9, line 12, and in FIG. 2 and FIG. 3, a frame control FEC decoder 64 (FIG. 2) receives coded frame control information (item 98, FIG. 3) from an FFT 58 (FIG. 2), and the frame control FEC decoder 65 (FIG. 2) uses these inputs to decode and demodulate the frame control information in a frame delimiter (item 92, FIG. 3), and once decoded and demodulated, the frame control information (item 98, FIG. 3) is passed to a MAC interface unit 74 (FIG. 2) for transfer to a MAC unit, and the MAC unit determines from the information if the delimiter (item 92, FIG. 3) indicates a start-of-frame, and if a start-of-frame is indicated, a RX configuration unit (item 72, FIG. 2) receives from the MAC unit frame control information to indicate that further decoding is necessary and the RX configuration unit uses the frame control information to direct the controller to configure the receiver units (items 66 and 68, FIG. 2) for further decoding of the remainder of the frame, such as a payload (item 82, FIG. 3) (a header section and a data section, a plurality of reconfigurable data processing modules, a single decoder serving a plurality of modules, a single decoder decoding bits of packets and providing signals to a plurality of modules, in which a portion of a packet is used to change data processing performed by a module, data portion of a packet is processed by a data processing module responsive to a respective selection signal). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Markwalter with the invention of Berenbaum since Markwalter provides a routing system in which configuration methods can operate in a device implementing a MAC protocol and communicating through noisy media, whether wireless or wired media, and

implementing OFDM, which can be incorporated into the system of Berenbaum to allow the ATM communication switches to operate in an OFDM based wireless ATM system.

Claims 3-7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berenbaum in view of Griffin, Markwalter, and further in view of Laufer et al. ("PCI-PipeRench and the SwordAPI: A System for Stream-based Reconfigurable Computing", 1999, IEEE Comput. Soc., US, p. 303), hereafter referred to as Laufer.

In regards to Claim 3, as discussed in the rejection of Claim 1, Berenbaum teaches a frame header, a mode selection bit, and a module. Bebernbaum fails to teach a bit for each module. Laufer teaches these limitations.

In the same field of endeavor, Laufer teaches in page 203, lower half of first column, a Chip ID tells each chip whether to keep a header or pass it along. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Laufer with the invention of Berenbaum since Laufer provides a technique where a component can determine if it is required to process a packet or pass it to another component, allowing a control processor in the apparatus of Berenbaum to address directly to a component within the apparatus so that components are not required to determine where to forward data within the apparatus through indirect means, such as processing network addresses.

In regards to Claim 4, as discussed in the rejection of Claim 1, Berenbaum teaches mode selection bit of a frame header. Berenbaum fails to teach a single

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decoder decodes a frame header to provide signals to a plurality of modules.

Markwalter teaches these limitations.

Markwalter teaches in column 8, line 65 to column 9, line 12, and in FIG. 2 and FIG. 3, a frame control FEC decoder 64 (FIG. 2) receives coded frame control information (item 98, FIG. 3) from an FFT 58 (FIG. 2), and the frame control FEC decoder 65 (FIG. 2) uses these inputs to decode and demodulate the frame control information in a frame delimiter (item 92, FIG. 3), and once decoded and demodulated, the frame control information (item 98, FIG. 3) is passed to a MAC interface unit 74 (FIG. 2) for transfer to a MAC unit, and the MAC unit determines from the information if the delimiter (item 92, FIG. 3) indicates a start-of-frame, and if a start-of-frame is indicated, a RX configuration unit (item 72, FIG. 2) receives from the MAC unit frame control information to indicate that further decoding is necessary and the RX configuration unit uses the frame control information to direct the controller to configure the receiver units (items 66, 68, and 70, FIG. 2) for further decoding of the remainder of the frame, such as a payload (item 82, FIG. 3) (a single decoder decodes a frame header to provide signals to a plurality of modules). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Markwalter with the invention of Berenbaum since Markwalter provides a routing system in which configuration methods can operate in a device implementing a MAC protocol and communicating through noisy media, whether wireless or wired media, and implementing OFDM, which can be incorporated into the system of Berenbaum to allow the ATM communication switches to operate in an OFDM based wireless ATM system.

In regards to Claim 5, as discussed in the rejection of Claim 1, Berenbaum teaches that decoded mode selection data is supplied to modules. Berenbaum fails to teach data is supplied in parallel. Griffin further teaches these limitations.

Griffin further teaches in column 4, lines 9-12, rearranging serial data into parallel data (signals are supplied in parallel). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Griffin with the invention of Berenbaum since Griffin provides a method of forwarding data in parallel, which can be faster in certain cases than forwarding data in serial.

In regards to Claim 6, as discussed in the rejection of Claim 1, Berenbaum in view of Griffin and Markwalter teaches modules and mode selection signals. Berenbaum fails to teach modules are connected to each other in series. Laufer teaches these limitations.

In the same field of endeavor, Laufer teaches in page 203, lower half of first column, a number of reconfigurable chips chained together, where the output of each chip is connected directly to the input of the next one (modules are connected to each other in series). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Laufer with the invention of Berenbaum since Laufer provides a system where a convergence device of the apparatus of Berenbaum can be composed of multiple components connected in a chain and that cooperate in processing data so that more data can be processed faster.

In regards to Claims 7 and 11, as discussed in the rejection of Claim 1, Berenbaum in view of Griffin and Markwalter teaches modules, incoming data, and a header. Berenbaum fails to teach a bypass mode where data is not acted on by a module and where a header indicates this. Laufer teaches these limitations.

In the same field of endeavor, Laufer teaches in page 203, lower half of the first column to the upper half of the second column, a Chip ID field of a header tells each chip whether to keep the header or pass it along, and when an input controller receives a bare packet, it checks to see if it is currently processing a header, and, if not, the packet must be for a device further on the chain, and the packet is passed on untouched (teach a bypass mode where data is not acted on by a module and where a header indicates this). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Laufer with the invention of Berenbaum since Laufer provides a mode indicated by a header where a component does not act on a packet and simply forwards it to an appropriate component within an apparatus, allowing the apparatus of Berenbaum to deactivate any unnecessary processing of particular packets and speeding up processing within the apparatus as a whole.

Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berenbaum in view of Griffin, Markwalter, and further in view of Chieu et al. (Patent No.: US 6,501,807 B1), hereafter referred to as Chieu.

In regards to Claim 8, as discussed in the rejection of Claim 1, Berenbaum teaches digital processing and digital components that are configurable. Berenbaum fails to teach a radio signal processing apparatus where signals are processed digitally. Chieu teaches these limitations.

In the same field of endeavor, Chieu teaches in column 3, lines 45-47, a digital signal processor (DSP) and a radio module (a radio signal processing apparatus where signals are processed digitally). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Chieu with the invention of Berenbaum since Chieu provides an apparatus with components that can allow wireless digital communications, which can be used to extend the apparatus of Berenbaum to include wireless services to customers, such as cellular or WiMAX services.

In regards to Claim 10, Berenbaum fails to teach a radio signal processing apparatus selected from a group consisting of a receiver, a transmitter, or a transceiver. As discussed in the rejection of Claim 8, Chieu teaches a radio signal processing apparatus. Chieu further teaches a receiver and a transmitter. Chieu further teaches in column 2, line 66 to column 4, line 6, and in FIG. 1, Sheet 1 of 6, a transmitter portion, a receiver portion, and a hybrid (a group consisting of a receiver, a transmitter, or a transceiver). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Chieu with the invention of Berenbaum since Chieu provides an apparatus with components that can allow wireless digital

communications, which can be used to extend the apparatus of Berenbaum to include wireless services to customers, such as cellular or WiMAX services.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berenbaum in view of Griffin and Chieu.

In regards to Claim 9, Berenbaum teaches in column 3, lines 8-12, and in column 4, lines 6-12, and in FIG. 3, Sheet 1 of 3, a line card (item 50, FIG. 3) includes a transmission convergence (TC) device (item 543, FIG. 3) with an in-band control configuration (Reconfigurable signal processing architecture comprising a reconfigurable data processing module).

Berenbaum also teaches in column 4, lines 12-16, and in column 5, lines 23-27 and 37-44, and in FIG. 4, Sheet 2 of 3, a transmission convergence device interfaces with a Utopia port, which is part of an ATM cell-based switch fabric interconnect with a SONET port, and a message format of a single 53-byte ATM cell (item 70, FIG. 4) for use in transferring control information between a control processor and a transmission convergence device, and a given ATM cell received in a transmission convergence device from a control processor is identified as a control message by the presence of a specific virtual path indicator (VPI)/virtual channel indicator (VCI) address in the ATM header (item 72, FIG. 4) (data is input to a module in a packet frame structure including configuration frames and processing frames, each frame including a header having a mode selection bit indicating whether the frame contains reconfiguration data or processing data, and a module is operable in a reconfiguration mode or a processing

mode responsive to a frame header and the mode selection bits are separated from data bits in each frame and are used to control mode selection in the module for determining how incoming data is handled, mode selection bits are separated from data in each frame and are used to control mode selection logic in a module for determining how incoming data is handled).

Berenbaum fails to explicitly teach a module is operable in a reconfiguration mode or a processing mode responsive to a frame header, and fails to teach default data supplied from memory outside a module. Griffin explicitly teaches a module is operable in a reconfiguration mode or a processing mode responsive to a frame header, and Cheiu teaches default data supplied from memory outside a module.

In the same field of endeavor, Griffin teaches in column 3, lines 30-43, and in FIG. 3, a DATA I.D. BIT (FIG. 3) in front of and separated from DATA BITS (FIG. 3), and where a value of 1 for the data identification bit may be preselected to indicate a packet contains configuration information, and, if a valid configuration is determined to exist, the transmitter shifts into normal transmit mode (a module is operable in a reconfiguration mode or a processing mode responsive to a frame header). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Griffin with the invention of Berenbaum since Griffin explicitly teaches a transmitter module shifting from a configuration mode to a normal transmit mode, and can be implemented in the apparatus of Berenbaum since it ensures a convergence device of Berenbaum is configured properly prior to further data

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processing, ensuring that subsequent data is not processed with an incorrect, obsolete, or expired configuration that may result in lost, misused, or misdirected data.

In the same field of endeavor, Cheiu teaches column 4, lines 46-52, and in FIG. 2, Sheet 1 of 6, a flash memory (item 24, FIG. 2) containing program instructions that are utilized upon initial start-up, where the start-up program is uploaded from the flash memory to a microcontroller (item 22, FIG. 2) and copied to a DRAM (item 23, FIG. 2) (default data supplied from memory outside a module). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Chieu with the invention of Berenbaum since Chieu provides a system where a start-up program is stored on non-volatile memory, allowing the apparatus of Berenbaum to reinitialize after being shut down or to recover after a power outage.

Response to Arguments

Applicant's arguments filed 09/24/2008 have been fully considered but they are not persuasive. With respect to the rejection of applicant's Claim 1, applicant submits that the Markwalter reference does not describe the "receiver units" in column 8, line 65 though column 9, line 12 of the Markwalter reference. Examiner respectfully disagrees. Markwalter states in column 8, lines 21-52, and in FIG. 1 and FIG. 2, **during a data receive process**, OFDM frames transmitted over a channel to a receiving node 12b (FIG. 1) by a transmitting network node 12a (FIG. 1) are received at a PHY unit 22 (FIG. 1 and FIG. 2), from a AFE unit 26 (FIG. 1 and FIG. 2) by an ACG unit 54 (FIG. 2), and the output of the ACG unit 54 is processed by a FFT unit 58 (FIG. 2), and **the output of**

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the FFT unit 58 is provided to the channel estimation unit 60 (FIG. 2), the synchronization unit 62 (FIG. 2), the frame control FEC decoder 64 (FIG. 2) and the demodulator 66 (FIG. 2), where, more specifically, phase and amplitude values of the processed receive data are provided to the channel estimation unit 60 (FIG. 2), which produces a new channel map, and where a RX configuration unit 72 (FIG. 2) receives the channel map index and the number of OFDM symbols from the frame control FEC decoder 64 (FIG. 2), retrieves from the RX channel map 78b (FIG. 2) the channel map specified by the channel map index provided by the frame control FEC decoder 64, and provides RX configuration information (derived from the channel map parameters) to the controller 76 (FIG. 2), and the RX configuration information is used to configure the data FEC decoder 68 and thus includes block size and other information necessary for decoding the frame. The synchronization unit 62 provides a start-of-frame signal to the controller 76, and in response to these inputs, the controller 76 provides configuration and control signals to the data FEC decoder (item 68, FIG. 2) and to the demodulator 66 (FIG. 2). The FEC decoder 68 and the demodulator 66 of Markwalter are “receiver units” that are being configured during a data receive process that is cited above and that continues into column 8, line 65 to column 9, line 12 of Markwalter that is applied in the rejection of Claim 1, and, as a result, Markwalter teaches “reconfigurable data processing modules”.

Applicant also submits that the “receiver units” of Markwalter are units on the network accessible by the MAC 74 (FIG. 2) of Markwalter, and that in Markwalter,

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column 9, lines 13-16, that the “transmitter/receiver functional units... have been largely omitted herein”, and that the “receiver units” that are being reprogrammed are not the elements described by examiner in the rejection of Applicant’s Claim 1. Examiner respectfully disagrees. Markwalter states in column 9, lines 13-16: “For purposes of simplification and clarity, **other details** of the PHY unit’s transmitter/receiver functional units (which are known to those skilled in the art and are not pertinent to the invention) **have been largely omitted** herein” (emphasis added by examiner). Markwalter also states in column 3, lines 63-64: “FIG. 2 is a detailed block diagram of the PHY device (shown in FIG. 1).” As a result, “the PHY unit’s transmitter/receiver functional units” are **not** units on a network accessible by the MAC 74 as submitted by applicant, but are the functional units of the PHY device shown in FIG. 2, and where the PHY device is item 22 of FIG. 1. The “receiver units” of Markwalter are the receiver functional units of the PHY device as shown in FIG. 2 of Markwalter.

Applicant submits that Griffin does not disclose or suggest and can not provide material that is missing from Berenbaum. Examiner respectfully disagrees this is sufficient for the withdrawal of the rejection of Claim 1. As discussed in the rejection of Claim 1, Griffin teaches “a module is operable in a reconfiguration mode or a processing mode responsive to a mode selection signal” of Applicant’s Claim 1, and, as discussed in the previous paragraphs and in the rejection of Claim 1, Markwalter teaches the limitations of Claim 1 not taught by Berenbaum and Griffin.

Applicant’s also submit that a Chip ID which identifies a particular chip that a header is meant to control, and that this is not the same as “a dedicated mode selection

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bit for each of the modules, and that the mechanism that would be used by Laufer to process a Chip ID is much more complex than a simple gating scheme that may be used by a system according to Applicant's present invention. Examiner respectfully disagrees this is sufficient for the withdrawal of the rejection of Claim 3. Claim 3 of Applicant does not claim limitations that clearly indicate how at least one bit is being utilized for each module, or how a bit is "dedicated" to a module, to clearly distinguish Claim 3 from the teaching of the combination involving Berenbaum in view of Griffin, Markwalter, and Laufer as applied in the rejection of Claim 3. Also, although the process of Laufer may appear to be more complex than the process disclosed in the specification of Applicant, a more complex process can anticipate a simpler process.

Applicant also submits that the memory 24 of Chieu provides program instructions to a microcontroller 22 which is in a same module 20 as a memory 24, and, thus, Chieu does not disclose a memory "outside the at least one module" as required by Applicant's Claim 9. Examiner respectfully disagrees this is sufficient for the withdrawal of the rejection of Claim 9. Although a flash memory 24 is presented by Chieu as being in a same module 20 as a microcontroller 22 and a DRAM 23 of Chieu, Claim 9 of Applicant does not contain limitations that prevent the word "module" from being reasonably interpreted as any component of a system of components that are being used together, such as a microcontroller 22 or a DRAM 23 of Chieu, and, as a result, the word "module" in Applicant's Claim 9 may include components of a system of components that are being used together, and a microcontroller 22 or a DRAM 23 of

Chieu can be "modules" in a reasonable interpretation of the word "module" as presented in Applicant's Claim 9.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA SMITH whose telephone number is (571)270-1826. The examiner can normally be reached on Monday-Thursday 9:30am-7pm, Alternating Fridays 9:30am-6pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Joshua Smith
Patent Examiner
06 October 2008

/Hassan Kizou/
Supervisory Patent Examiner, Art Unit 2419